



## The Impacts of Liquidity on Profitability in Banking Sectors of Iraq: A Case of Iraqi Commercial Banks

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### Abstract

*This study examines the influence of liquidity on the profitability of Iraqi commercial banks. Five banks based in Iraq namely: North bank, Iraqi Islamic bank, Sumer bank, Dar Es-Salam bank and Babylon bank randomly selected and analyzed for the current study over the period 2005 to 2013. Moreover, annual reports of these banks have studied and the main ratios of profitability and liquidity were calculated. These reports are available at Iraqi Stock Exchange site. The variables that were identified as independent for liquidity were, loan deposit ratio, deposit asset ratio and cash deposit ratio, while return on assets as dependent variable for profitability. The Ordinary Least Square (OLS) model used to examine the impact of liquidity on profitability. The study observes that any increase in liquidity ratios as above mentioned will lead return on asset to increase as well. Depending on this study it could be better for Iraqi banks to keep a balance between liquidity and profitability.*

**Key Words:** Return on Asset (ROA), profitability, liquidity

**JEL classification:** G21; G28; G35

### Introduction

In recent years, the impact of liquidity on the profitability is most controversial topic in the banking sector particularly and other sectors in general. There are several studies carried out by different authors to examine that influence. Acter and Mahmud (2014) point out that the two very crucial issues in organization management which might always evaluate the financial health of the company are liquidity and profitability. Both liquidity and profitability might be important decisions for any financial institutions. For instance, Jeevarajasingam (2014) states that the shareholder's return, risk and customer satisfaction can be influenced by both liquidity and profitability decisions which are significant managerial decision. Each bank attempts to attract more customers in order to obtain more profits and be more profitable bank.

Furthermore, Kaur and Skilky (2013) demonstrate that a company's overall efficiency and performance can be showed by the profitability ratios while a company also needs liquidity in order to continue their business. Not only profitability is important for financial institutions, but also liquidity might be crucial as well in making financial decisions. As Don (2009, cited in Ahmad 2016) believes that for the survive of the company there should be emphasize more on liquidity than profitability. Similarly, Arena (2008, cited in Acter and Mahmud 2014) observes that one of the driving factors might probably have an effect on the bank failure is liquidity.

Some financial institutions might keep less money in their accounts to gain more profits and they might not care about their liquidity positions. According to Shafana (2015) the firm's liquidity position would be stronger when they keep a large proportion of current assets but also the overall of profitability will be reduced. It might be not clear for many banks or financial institutions to determine the level of optimal liquidity. According to Kaur and Skilky (2013) the peculiar nature of the firm determines the liquidity requirement of a firm. Moreover, they claim that the optimal level of liquidity cannot be determined by any particular rule which a company might keep to guarantee positive influence on its profitability. As Dahiyat (2016) suggests that in order to calculate the liquidity position of an entity liquidity ratios must be used because these ratios are important in determining the financial position of the entity in short term. It is clear to note that it might be necessary for any banks to keep a balance between liquidity and profitability to be in a safe position when they invest in their current assets.

### **Purpose of the study**

The main objective of the present study is to find out the impact of liquidity on profitability. This paper will attempt to identify the main impacts of liquidity on profitability in the five Iraqi commercial banks namely North bank, Islamic bank, Sumer bank, Dar Es Salam and Babylon bank over the period 2005 to 2013.

### **Research Question**

What is the impact of liquidity on the profitability of the Iraqi commercial banks?

### **Hypotheses of the study**

The following hypotheses were formulated for the study.

H<sub>0</sub>:- Liquidity has a positive impact on the profitability in Iraqi commercial banks.

H<sub>1</sub>:- Liquidity has a negative impact on the profitability in Iraqi commercial banks.

## **Literature Review**

### **The nature and scope of predictive literature: A critical characterisation**

There are very few studies that have been carried out by various authors to investigate the impact of liquidity on the profitability in banking sectors. Surprisingly, there is no such study has been carried out in Iraqi banks, specifically to find out the impact of liquidity on the profitability of banks. The relationship between liquidity and profitability is still not clear to many readers. Several authors have found a negative relationship while some writers have found a negative association. As well as some of them have found both results and others have found no relationship.

The relationship between liquidity and profitability might be nonlinear. There are several authors in various countries who found a nonlinear relationship between them in banking sector. For example, Shahchera (2012) have found that a nonlinear connection between profitability and liquid assets for a sample of Iranian banks for the period of 2002 to 2009. Moreover, Olarewaju and Adeyemi (2013) found no important link between liquidity and profitability in their study which have conducted on most of deposit money banks in Nigeria over the nine years. It is more interesting that some authors have conducted the study on the same sector and got the same results. Graphic example of this is Akter and Mahmud (2014) indicate that there is no significant link between liquidity and profitability in the sample of 12 banks in Bangladesh. Similarly, Abdulla and Jahan (2014) found no relationship between liquidity and profitability of private commercial banks CSE 30 over the five years in Bangladesh. Also Jeevarajasingam (2014) examined the influence of

liquidity on profitability of banking sector in Sri Lanka and found that liquidity has no significant impact on profitability of that banks. Not only in banking sector authors suggest no link between profitability and liquidity but also in other sectors. For instance, in his study Nireesh (2012) focused on the trade-off between liquidity and profitability of 31 listed manufacturing firms in Sri Lanka over the five years which found no significant relationship between liquidity and profitability for that firms. Likewise, Kaur and Skilky (2013) show that liquidity has low degree of impact on the profitability of cement firms in India.

Liquidity might impact profitability but this impact might not be clear is it a positive or negative as some authors mentioned. For instance, in the latest study conducted by Al Nimer et al. (2015) showed a significant impact of liquidity (quick ratio) on the profitability (ROA) for the Jordanian banks through the period of 2005 to 2011. Some authors believe that this relationship could be negative or positive at the same time. A good example of this is Narwes (2004, cited in Umobong 2015) suggests that the relationship between liquidity and profitability depend on the liquidity variables that could be organized by a firm and this relationship could be positive or negative.

Liquidity might have a positive impact on profitability and there are several authors who explained in their studies that relationship between liquidity and profitability is positive. For example, in the recent study conducted by Oluwasegun and Samuel (2015) found a positive relationship between liquidity and bank performance for a panel of 13 banks for the period of 2004 to 2012. Similarly, in another latest study conducted by Ismail (2016) found that liquidity (current ratio and the cash conversion cycle) have significant positive impact on profitability (ROA) of the 64 Pakistani non-financial firms for the period of 2006-2011. Furthermore, In a similar studies by Sur et al (2001), Bardia (2007), Bardia (2004) and Sur and Ganguly (2001) cited in Ahmad (2016) there is a positive relationship between liquidity and profitability. It is more interesting to note that in some countries the study to determine the effect of liquidity on the profitability have been done on the different sectors and various authors have obtained the same result. For example, Olagunju et al.(2012) observed that liquidity has a positive influence on profitability of a commercial banks in Nigeria. Similarly, Umobong (2015) demonstrates that there is a positive relationship between liquidity and profitability for a Pharmaceutical firms in Nigeria. Moreover, Ajanthan (2013) suggests that liquidity is positively associated with profitability in his study which has conducted on 8 quoted companies in Sri Lanka over the 5 years.

However, some authors have examined the impact between liquidity and profitability just for single ratios not the whole. On other words some authors have only examined one or two ratios of the profitability or liquidity. For example, Bourke (1989, cited in Shahchera 2012) found a positive relationship between liquid assets and profitability for 90 banks for the period of 1972 to 1981. Furthermore, Rehman et al.(2015) found a positive significant link between return on assets and current ratio of the listed companies in Saudi Stock Exchange over the 5 years. It should be noted that the positive relationship might be weak between liquidity and profitability. A good example of these are Lartey et al. (2013) found a weak positive link between liquidity and profitability for the period 2005-2010 of the listed banks in Ghana. Similarly, Ahmad (2016) examined the relationship between profitability and liquidity ratios of standard chartered bank Pakistan and show the weak positive connection between that ratios.

Liquidity might have a negative impact on the profitability because when the firm or any financial organization has more profit this might be the result of keeping a little money in their accounts. There are many authors who supported that liquidity has a negative effect on the profitability. For example, Shafana (2015) have found that liquidity have a significant and negative effect on profitability of financial institutions in Sri Lanka for the period from 2009 to 2013 which covered 16 banks and finance firms quoted in the Colombo Stock Exchange. Moreover, Raheman and Nasr (2007, cited in Akter and Mahmud 2014) found a strong negative relationship between liquidity and profitability in the study which conducted on some Pakistani firms listed on Karachi stock exchange. Similarly, Bolek and Wilinski (2012) found that liquidity has a negative impact on the profitability of a company in their study which has been done on a group of construction companies listed on Warsaw Stock Exchange. Eljelly (2004) used correlation and regression on a sample of 929 joint stock companies in order to examine the link between liquidity and profitability and found that there is a significant negative relation between them which has measured by current ratio. Furthermore, Saleem and Rehman (2011) mention that there is a close relationship between liquidity and

profitability when liquidity increases profitability will decrease and vice versa for the 26 oil and gas companies in Pakistan over the 5 years. Some recent studies by various authors examined that relationship. Likewise, In the recent study by Dahiyat (2016) empirically examined the impact of liquidity and solvency on banks profitability in all banks quoted in Amman exchange for the period 2012-2014 and found that profitability will be negatively influenced by liquidity.

Not only the impact of liquidity on profitability in various firms and manufactures is negative but also this impact is the same in banking sectors too as some authors supported that. There are a number of writers who found a negative impact of liquidity on profitability in banking sectors in different countries. For example, Owolabi et al (2011, cited in Akter and Mahmud 2014) claim that there is a negative relationship between profitability and liquidity in banking organization while this association is positive in manufacturing organization. Moreover, Molyneux and Thornton (1992, cited in Marozva 2015) found a negative link between liquidity and profitability. One of the latest study who has supported this idea is Marozva (2015) looked at the relationship between liquidity and bank performance over the period 1998 to 2014 for banks of South Africa and found adverse relationship between net interest margin and funding liquidity risk. The relationship between liquidity ratios and profitability ratios might be negative. Authors like Malik et al. (2013) supported that profitability ratio and liquidity ratio have a negative relationship in their study which has conducted on twenty two private banks of Pakistan over the 5 years. In summary, the literature review indicates that the impact of liquidity on the profitability is still not clear because as mentioned before some authors obtained linear relationship while other found nonlinear one.

## **Methodology**

This study is aimed to establish the impact of liquidity on the profitability of the Iraqi commercial banks. The sample of this study is confined to banking sector consists of only five banks which has randomly selected and examined for the analysis purposes. This study has used secondary data for the analysis and all the data were collected from annual reports of the particular banks especially income statements and balance sheets. Moreover, all the annual reports of this study are available in Iraqi Stock Exchange (ISX) site. This study is based on time series data through 9 years from 2005 to 2013. The collected data was analyzed by using E-views 8 statistical software and has been tested through descriptive statistics, correlation and regression analysis. To achieve the main results of the impact of liquidity on the profitability ordinary least square (OLS) estimation of data method has been used. Profitability has been selected as a dependent variable through return on assets and liquidity is determined as independent variable. The models for this study and variables have been used as follows:

### **Variables**

#### **Dependent variable**

Return on assets= net profit before tax/ total assets

#### **Dependent variables**

Loan deposit ratio= loan and advances/ total deposit

Deposit asset ratio= total deposits/ total assets

Cash deposit ratio= cash& equivalent/ total assets

### **Models**

$$ROA = \alpha + \beta_{11} LTD + \beta_{12} DTA + \beta_{13} CTD + U_i$$

Where: ROA= Return on assets

LTD= loan deposit ratio

DTA= deposit asset ratio

CTD= cash deposit ratio

$\alpha$  : the constant ,  $\beta$ : the regression coefficient

## Findings and analysis

Table 1 show that the descriptive statistics of the ROA as a dependent variable and LTD, CTD and DTA as independent variable of five Iraqi banks over the nine years. It reveals that all the variables have a positive mean ROA 0.060667, LTD 0.510769, DTA 0.486174 and CTD 0.583532. LTD has the highest maximum value of 1.80155 and ROA the lowest maximum value of 0.14474. DTA has the highest minimum value of 0.031751 and LTD has the lowest value of 0.00487. The highest standard deviation value is LTD 0.4091009 and the minimum one is ROA with a value of 0.028140. It can be clearly seen that depending on the descriptive statistics almost all the variables have positive descriptive value.

**Table 1:** Descriptive statistics of the variables

	ROA	LTD	DTA	CTD
Mean	0.060667	0.510796	0.486174	0.583532
Median	0.0555999	0.46611	0.492805	0.57198
Maximum	0.14474	1.80155	0.853171	1.00207
Minimum	0.00744	0.00487	0.031751	0.01772
Std. Dev.	0.028140	0.4091009	0.229309	0.2139658
Skewness	0.735201	0.998782	-0.247555	-0.477034
Kurtosis	3.601276	3.961881	2.403352	3.506411
Jarque-Bera	4.731781	9.2165307	1.127104	2.187564
Probability	0.093865	0.009969	0.569183	0.334947
Sum	2.73002	22.985820	21.87782	26.25894
Sum Sq. Dev.	0.0348424	7.363999	2.313640	2.0143815
Observations	45	45	45	45

**Source:** Authors calculation

Table 2 illustrates the correlation between dependent variable which is return on assets and independent variables such as loan deposit ratio, deposit asset ratio and cash deposit ratio over the specified period. It can be observed from the table that the positive correlation found between the dependent and independent variables. So that an increase in independent variables, dependent variable will also increase. Moreover, no correlation coefficient is passed the rule of thumb  $\pm 0.8$  although the relation of LTD and DTA is quite high. An important finding of correlation matrix of this study is that the correlation between independent variables is negative.

**Table 2:** Correlation Matrix

	ROA	LTD	DTA	CTD
ROA	1	0.0286	0.0363	0.2062
LTD	0.0286	1	-0.6563	-0.4256
DTA	0.0363	-0.6563	1	0.3609
CTD	0.2062	-0.4256	0.3609	1

**Source:** Authors calculation

**Table 3:** output from E-views

Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 03/17/16 Time: 20:08				
Sample: 2005 2013				
Periods included: 9				
Cross-sections included: 5				
Total panel (balanced) observations: 45				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.03082664624853381	0.02240887722986167	1.37564439004801	0.1764010561264046
LTD	0.01229020527251955	0.01432166049991661	0.8581550493108751	0.3957959590143073
DTA	0.007296049990619125	0.02479259769721233	0.2942834018332613	0.7700261702212327
CTD	0.03430065081394466	0.02215287891698931	1.548360867338063	0.1292206652276079
R-squared	0.06106349284346054	Mean dependent var		0.06066711111111111
Adjusted R-squared	-0.00763917841189593	S.D. dependent var		0.02814023951747764
S.E. of regression	0.02824751918026571	Akaike info criterion		-4.210934862625999
Sum squared resid	0.03271481593341865	Schwarz criterion		-4.050342641313082
Log likelihood	98.74603440908499	Hannan-Quinn criter.		-4.151067694928059
F-statistic	0.8888081311496255	Durbin-Watson stat		1.521893020199213
Prob (F-statistic)	0.4549834994210857			

**Source:** Authors calculation

It is seen from the Table 3 that the results of regression which is panel least square. From that table for a one unit increase in LTD, ROA will increase by 0.012291 holding all other variables constant. The positive relationship makes sense because any increase in the LTD should increase ROA. Furthermore, any increase in the both DTA and CDT, ROA will increase by 0.00729605 and 0.034301 respectively holding LTD constant. The constant term here provides approximately the average of ROA, 0.03082665, when other explanatory variables are equal to zero. Here this means that ROA will equal to 0.03082665 when there is no independent variables. This does not make any economic sense.

**Table 4:** T- statistics and probabilities

Variable	t-Statistic	Prob.
C	1.37564439004801	0.1764010561264046
LTD	0.8581550493108751	0.3957959590143073
DTA	0.2942834018332613	0.7700261702212327
CTD	1.548360867338063	0.1292206652276079

**Source:** Authors calculation

All tests are two sided and conducted at the 5% level, with degree of freedom(N-K-1) equal to 40. It gives approximately a t-critical value of +/-2.462/ so that if  $|t\text{-statistic}| > |t\text{-critic}|$  the null hypothesis will be rejected at the 5% level.

For LTD:

$$H_0: B_1 \text{ equals to } 0; H_1: B_1 \text{ not equals to } 0$$

/ 0.8581550493108751/ </ 2.462/ thus the null hypothesis will not be rejected and it can be said that  $B_1$  is significantly different from zero at the 5% level. And p-value is 0.1764010561264046, it means that the null hypothesis will not be rejected at 10% level.

For DTA:

$$H_0: B_1 \text{ equals to } 0; H_1: B_1 \text{ not equals to } 0$$

/ 0.2942834018332613/ </ 2.462/ thus the null hypothesis will not be rejected and it can be said that  $B_1$  is significantly different from zero at the 5% level. And p-value 0.7700261702212327, it means that the null hypothesis will not be rejected at 10% level.

For CTD:

$$H_0: B_1 \text{ equals to } 0; H_1: B_1 \text{ not equals to } 0$$

/ 1.548360867338063/ </ 2.462/ thus the null hypothesis will not be rejected and it can be said that  $B_1$  is significantly different from zero at the 5% level. And p-value 0.1292206652276079, it means that the null hypothesis will not be rejected at 10% level.

In order to test overall significance test:

$$H_0: B_1=B_2=B_3=0; H_1: \text{at least one } B_1 \text{ is not equal to zero.}$$

The F- statistics reported by E-views is 0.8888081311496255. Using the P-value which equals to 0.4549834994210857 the null hypothesis cannot be rejected and say the variables are jointly significantly different from zero at the 10% level. The  $R^2 = 0.06106349284346054$  and the adjusted  $R^2 = -0.00763917841189593$ . It means that 0.062 of the variation in ROA can be explained by explanatory variables. This is not high percentage indicating that this model is not doing a variable good job at explain variations in ROA. Moreover, no problem of autocorrelation found in the model equation because Durbin-Watson Stat is 1.521893020199213. The results of the study is revealed below under the regression equation as

$$ROA = 0.03083 + 0.0123 (LTD) + 0.0073 (DTA) + 0.034301 (CTD) + \epsilon_i$$

## Discussion

The results from linear regression analysis show that ROA is positively affected by the LTD, CTD and DTA. Unfortunately this result is not in line with the result of Abdullah and Jahan (2014) who had investigated the impact of liquidity on profitability of the private commercial banks in Bangladesh because they had used the same variables as this study just they used two variables as dependent. Moreover, they accepted the null hypothesis in their study which indicated that there is no significant relationship between liquidity and profitability. However, this result is consistent with the result of the study of Oluwasegun and Samuel (2015), Ismail (2016), Sur et al (2001), Bardia (2007), Bardia (2004) and Sur and Ganguly (2001) cited in Ahmad (2016), Olagunju et al.(2012), Umobong (2015), Ajanthan (2013) and Bourke (1989, cited in Shahchera 2012) .

## Conclusions

To sum up, this research has investigated the impact of liquidity on the profitability of 5 Iraqi banks over the period 2005 to 2013. More interestingly, it is an undeniable fact that liquidity and profitability management are important factors for any successful banks in Iraq. However, little is known about the Iraqi banking system. An interesting and valuable result of this research was that liquidity ratios have a positive impact on profitability in the objective banks in Iraq. This study had a number of limitations. Currently there are more than thirty banks in Iraq and Kurdistan region. One of the main limitations of this study is that this study has covered only five banks because annual reports of other banks are not available in their sites and in the ISX. Moreover, the data of that banks were available just for nine years. Another limitation is that it is still not clear why Iraqi banks hide their annual reports particularly income statements and balance sheets from people. It should be noted that this study has covered only banking sectors. Depending on the

above findings any increase in the cash & equivalents, loans and advances, and total deposit will increase the net income for the banks. So that Iraqi banks should prefer more safety and confidence in order to attract more customers or more depositors for gaining more profits and be safe at the same time. It might be a good idea for Iraqi banks to keep a balance between liquidity and profitability to avoid any financial risks. Finally, more studies could be conducted in Iraqi banks to investigate the impact of liquidity on profitability of large samples.

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